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Manuscript Title: What shape is your neighbourhood? Investigating the micro geographies of physical activity

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Abstract

Being physically active has demonstrated health benefits, and more walkable neighbourhoods can potentially increase physical activity. Yet not all neighbourhoods provide opportunities for active lifestyles. This paper examines the social context of being active in local and non-local places. We use a social practice theoretical framework to examine how residents talk about and make sense of physical activity and places, contrasting individual and neighbourhood factors. In 2010, fourteen focus groups were held in four neighbourhoods varying by walkability and area-level deprivation (two Auckland and two Wellington, New Zealand), and with participants grouped by gender, ethnicity, and employment. Focus groups elicited discussion on where local residents go for physical activity, and the opportunities and barriers to physical activity in their local area and beyond. Thematic analyses compared across all groups for contrasts and similarities in the issues discussed.

Neighbourhood walkability factors appeared to shape *where* residents engage with public places, with residents seeking out good places. Individual factors (e.g. employment status) also influenced *how* residents engage with their local neighbourhoods. All groups referred to being active in places both close by and further afield, but residents in less walkable neighbourhoods with fewer local destinations drew attention to the need to go elsewhere, notably for exercise, being social, and to be in pleasant, restorative environments. Being physically active in public settings was valued for social connection and mental restoration, over and above specifically ‘health’ reasons. Residents talk about being active in local and non-local places revealed agency in how they managed the limitations and opportunities within their immediate residential setting. That is, factors of place and people contributed to the ‘shape’ of everyday residential environments, at least with regard to physical activity.

Keywords: New Zealand; neighbourhoods; walkability; collective lifestyles; physical activity; built environment; focus groups.

Background

Being physically active has demonstrated physical and mental health benefits. Residing in neighbourhoods that are more walkable and with better access to greenspace and local transport infrastructure has been associated with increased overall physical activity (Ball et al., 2007; Giles-Corti et al., 2009; Sallis et al., 2009; Witten et al., 2012). However, deeper understanding of the social determinants of health behaviours such as walking and cycling for transport, exercise, and physically active recreation requires a broad range of epistemological and methodological approaches. If we want to ask why and how contexts come to influence (or not) individual health (Poland et al., 2006) we also need to scrutinise the significance of every day place-based practise and experience, the meanings ascribed to neighbourhoods by local residents, and the multi-scalar processes which operate to affect how they negotiate their local neighbourhood. This paper contributes to these debates by examining the social context of physical activity, particularly with respect to the specific role played by residential settings alongside other environments in shaping the geography of engagement with places through being physically active.

In the following discussion of the background literature we explore how social practice can be used as a way of examining the recursive relationship between people and place through activity. We then consider how the neighbourhood environment itself might structure what is more or less possible for residents, and what that might mean for residents mobility to local and non-local places. Lastly, we look at what distance might mean for engagement with different places.

Engaging in places through activity

Investigating how people interact with places through being physically active can reveal why engaging in residential and non-residential places might matter for health. This more “relational” approach sees people and place are intertwined rather than seeing the neighbourhood as separate entities from residents (Cummins et al., 2007). Cockerham (2005) Macintyre et al (2002), Bernard

(2007) and Frohlich (2001) were similarly interested in examining the recursive nature of the processes between the structural aspects of neighbourhood and the practices of residents; “Place cannot influence social practices without groups of people who are influencing place through their social practices.” (Frohlich et al., 2001, p. 792). They argue that it is not enough to observe the effect of structures on individual practices, but that we need to observe how the process of everyday activity feeds back into the nature of the structures themselves, and then sets up new conditions for practices and so on. For example, the built environment can be seen as a reflection of accumulated social practices of a community, which in turn goes on to influence the current practices of residents, and so it goes on.

Calling on social practice frameworks Frohlich et al (2001) proposed that what people do as part of their routine, everyday activities arises from their context, and at the same time recursively transforms that context. In this conceptualisation ‘neighbourhood’ is framed as one geographic context of residents’ social practices; “Collective lifestyles are defined here not just as the behaviours that people engage in, but rather, as the relationship between people’s social conditions and their social practices.” (Frohlich et al., 2001, p. 785). Distinctive local cultures can emerge that affect individual behaviours, and also influence how meanings are derived from such experiences (Thompson et al., 2007). Taking a social practice approach also recognises that behaviours and practices form part of the (micro) episodes of everyday life and that ‘place’ can simultaneously both condition and be shaped by human behaviours such as physical activity.

Viewing physical activity as a social practice is particularly relevant given its role in our everyday lives through active (for example, walking) and passive (for example, cars) forms of transport, and exercise and recreation. With regard to transport-related activity, seeing commuting by car, cycle, walking or public transport as a social practice allows it to be observed within the broader social context of work and home as well as the urban environment (Guell et al., 2012). Guell et al’s (2012) work highlights how individuals manage and make sense of their commuting within this

context, but also how they are influenced by and in turn influence the physical and social environment around them what is happening around them,

...the travel choices made by individuals moving through a shared transport network help to shape the context in which others make their decisions, as cyclists engage in actions of resilience or defeat in response to dangerous interactions with other traffic participants (p. 238).

Cockerham (2005) proposed that we observe how the lifestyle “choices” of individuals are enabled or constrained by the structures present in the neighbourhood. Geographical neighbourhoods can therefore be thought of as one set of structural living conditions, or resources, that provides limits and opportunities on the possible locations available to people. Taking a ‘neighbourhood resource’ approach also encourages researchers to consider how health-related resources might be both produced and consumed within the neighbourhood setting (Bernard et al., 2007). Bernard et al (2007) regarded the geographical neighbourhood as a collection of health related resources and relationships that are (potentially) shared or consumed by all residents. Carpiano (2006) employed Bourdieu’s social capital theory to propose that neighbourhoods can usefully be framed as sites or institutions where collective social resources are produced and consumed. The neighbourhood was constructed as an institution with a “stock or quantity of resources” (Carpiano, 2006, p.167).

In a similar way, neighbourhoods can be regarded as ‘opportunity structures’ within which residents can access various health-related resources (Baum and Palmer, 2002; Macintyre et al., 2002). Thus, living in disadvantaged neighbourhoods could severely constrain the possibilities open to people, when compared to those living in more affluent areas, because of the more limited resources available in them. Baum and Palmer’s study (2002) found that neighbourhood urban form can provide socially constructed local ‘opportunity structures’ that facilitated residents’ walking and being able to move freely around in the neighbourhood, as well as opportunities for social engagement (Baum and Palmer, 2002; Macintyre et al., 2002). They identified that physical features of neighbourhoods facilitated social interaction by providing common meeting spaces or ‘third

places' of belonging and conviviality (Oldenburg, 1999). Environments that present opportunities for informal or unplanned interaction provide an increased sense of community, which can in turn motivate activity within the neighbourhood (Lund, 2002). In some neighbourhoods the poor quality of places and vandalism reduced the opportunities available to residents (Baum and Palmer, 2002). Living in neighbourhoods with fewer opportunity structures could therefore constrain physical (and social) activity or encourage residents to go elsewhere. Alternatively, compact, urban form would ideally provide sufficient, good quality resources for shopping, work, schooling and leisure, with residents therefore 'choosing' to live locally. Such communities could "shrink individual activity space"(Witten et al., 2011a, p. 4) with daily activity mainly undertaken within a relatively self-contained geographical area, described by Vallée et al. (2011) as 'spatially limited daily mobility'. If so, the residential context may therefore provide important parameters for how residents use local *and* other more distant, non-local resource settings to live healthy, active lifestyles.

Distance

Accordingly, attention is now turning to where people actually go in their everyday lives (so-called 'activity space' (Chaix et al., 2012; LeDoux and Vojnovic, 2013; Vallée et al., 2011; Zenk et al., 2011) so we can better assess the total environmental context of health behaviours. Despite this, few studies have considered how people use and make sense of proximal and distal places in their everyday lives, and the implications for public health concerns.

Structural factors such as employment, transport, gender, and ethnicity can affect and inform how people engage with places in different locations through physical activity. Employment is a common reason for frequent travel outside of the local environment, acting as an alternative 'anchor point' (Chaix et al., 2012). Characteristics of the commuting route can also contribute to the overall experienced environment including access to destinations and opportunities for social interaction along the way (Gatrell, 2013). Further, 'trip-chaining' where residents incorporate multiple tasks and side trips into the overall journey (Golob and Hensher, 2007) can be aided by the integration of the

resources accessed along the commuting route, suggesting the location of work or school is an important factor in the utilisation of these particular resources. Ways of socially engaging with place may also vary by gender (Ivory et al., 2011; Kavanagh et al., 2006), and ethnicity (McCreanor et al., 2006).

Qualitative approaches offer valuable means of further illuminating the complexity of potential pathways suggested by quantitative associations between neighbourhood environments, physical activity, and health. A number of studies examine contextual influences on physical activity by comparing neighbourhoods types in terms of socioeconomic factors (Baum et al., 2009; Burgoyne et al., 2008; Yen et al., 2007), and walkability (Sugiyama et al., 2008). However to our knowledge, there are none that compare these factors and also consider how individual characteristics such as gender, ethnicity or class may interact with neighbourhood ‘type’. Few physical activity studies include comparisons across neighborhood types and types of residents, and we are not aware of any that also observe local / non-local settings.

Context

The qualitative research reported in this paper was nested within a larger project, the URBAN study, which surveyed the physical activity behaviours of 2033 residents aged 18-65 years living in 48 New Zealand neighbourhoods (Badland et al., 2009). Survey participants were asked if they were willing to take part in further research. From these participants fourteen focus groups were conducted between November 2009 and March 2010 in four suburban neighbourhoods: Karori and Rongotai in Wellington, New Zealand’s capital, and Konini and Waimumu in Auckland city, the country’s largest city. The four study neighbourhoods contain predominantly single detached housing and reflect typical New Zealand suburban forms. The study received ethics approval from the Department of Public Health, University of Otago (category B).

Methods

The four case study neighbourhoods were selected to provide contrast in levels of amenities, qualities and resources that support a range of physical activity, as measured by indices of walkability (a summary measure of street connectivity, landuse mix, dwelling density, retail floor area ratio) (Badland et al., 2009), and density of local destinations (including eight domains covering education, transport, recreation, social and cultural, food retail, financial, health, and other retail) (Witten et al., 2011b). Contrast was also sought by small area-level socioeconomic deprivation, using the New Zealand Index of Deprivation (NZDep06) which was constructed using nine socioeconomic variables (including income, home ownership, unemployment, qualifications etc.) taken from the 2006 New Zealand census (Salmond et al., 2007). The Auckland neighbourhoods (Waimumu and Konini) were selected as having relatively fewer physical activity resources either within or close by than the Wellington study sites. Within cities neighbourhoods were selected for contrast across socioeconomic deprivation; in Wellington, Rongotai (Wellington) was ranked in the fourth most deprived quintile (compared Kaori: least deprived quintile); and in Auckland, Waimumu was ranked as in the third most deprived quintile (compared to Konini: least deprived quintile). To ensure variation in participant ethnicity, Māori-specific focus groups were included from each city.

The neighbourhoods

The Wellington neighbourhoods are relatively well resourced to support a variety of physical activity for their residents. The suburb of Karori is close to the inner city, with much greenery. It is ranked as relatively less deprived with a mean decile 2. Nearby are a variety of destinations, including retailers, schools, parks, sports and recreation amenities and accessible ‘bush’ (the colloquial term for native forest). Rongotai has a number of local and regional facilities and secondary schools. It is bounded by a rocky foreshore to the north and to the south by a sandy beach. Houses are noticeably smaller and denser than in other case study neighbourhoods.

In contrast, the Auckland neighbourhoods have fewer features that encourage physically active lifestyles. Konini is on Auckland's suburban boundary and has a mix of more developed suburban landscapes and less visible houses nestled within the bush on essentially rural roads, often without footpaths. There are few retail or community destinations and sports facilities close by, but many bush walking tracks. Waimumu is bordered by a motorway, farmland and an estuary. Typical of the wider area, the street form is predominantly cul-de-sac, resulting in lower street connectivity. As with Konini, there are few local destinations such as retail or sports and recreation facilities within the area or close by.

Participants

All adults who agreed when surveyed to further contact were included in the sampling frame. As participants had already provided socio demographic details we were able to organize focus groups by key characteristics suggested by the literature as influencing how people engage with their residential setting; gender, employment status, and ethnicity. Age was not prioritised as a stratifying factor, as we were uncertain that there would be sufficient contrast by lifecourse stage given that the URBAN study sample did not include people of retirement age. Sociodemographic information from completed survey data was used to selectively recruit potential participants by gender (Ivory et al., 2011; Vallée et al., 2010) ; labour force status (Inagami et al., 2007; Zenk et al., 2011): 'fulltime employed' (employed fulltime in a workplace located outside the neighbourhood) (note there were no participants who were employed full time whose workplace was located within the neighbourhood), 'non-fulltime employed' (not in the labour force, unemployed, or part time employed i.e. less than 30 hours); and ethnicity (McCreanor et al., 2006) ('Māori', 'non-Māori'). Low numbers of Māori participants in Konini and Karori meant we were unable to have Māori-specific focus groups in these neighbourhoods, and numbers precluded having the full range of groups in Rongotai and Waimumu. For these reasons it was decided to prioritize labour force status groups in all neighbourhoods and only have gender-specific groups in Konini and Karori.

Multiple attempts were made to contact all potential participants in each neighbourhood by telephone, followed by an explanatory letter. Snowball sampling was also used to recruit four participants in situations where there were insufficient survey participants available. Supermarket vouchers were offered in appreciation of participants' time.

Procedure

Fourteen focus groups were conducted: four each in Karori and Konini and three each in Waimumu and Rongotai. Focus groups ranged from three to eight participants, and all groups were recruited and led by the researchers. Māori participants and groups were led by a Māori researcher. The guided interviews used a semi-structured interview schedule with questions constructed around five keys areas of enquiry; (1) where are people physically active in the (self-defined) neighbourhood and related places, (2) what matters about public places for physical activity, (3) the social aspects of being physically active, and (4) the role of public places in community life. Participants were encouraged to consider the full range of physical activity, including purposeful exercise as well as incidental activities such as walking with children. This paper focuses on questions that prompted talk about the location of physical activity, specifically: "Tell us about the ways in which people living here are physical active. Where are local people physically active? What kinds of places are they?" The interviews concluded with participants in each group asked, "If we gave you a magic wand, what would you like to see changed and/or preserved in [this neighbourhood] to support physical activity for residents?"

The questioning related to the personal experience of participants as well as explicitly accommodating 'shadowed data', that is, participants were prompted to speak about other people in their residential area. Large bespoke maps were created from satellite images for each neighbourhood and surrounding areas to foster discussion. Each focus group discussion was audio-taped and lasted from approximately 1 hour to 1¾ hours.

Analysis

The interviews were transcribed verbatim for each group and all reference to individual identities removed from the transcripts. After multiple readings of the data by VI and MR, transcripts were coded using broad codes derived from the research questions and categories that emerged from the data. NVivo (QSR) qualitative analysis software was used to aid data management. Thematic analyses were undertaken to “...provide a more detailed and nuanced account of a particular theme, or group of themes, within the data” (Braun and Clarke, 2006, p. 83). We identified text where participants within each group talked about where they and people in their suburb went, especially for physical activity, and how they talked about those places. Common themes were firstly extracted across all focus groups, then comparisons made between groups. Illustrative quotes are attributed to the focus group rather than individual participants, reflecting the unit of analysis.

Results

Firstly we compare talk across the focus groups about where people in their suburb went for physical activity, under four headings: open spaces, significant qualities, streets, and everyday needs. Secondly, we explore what people from different areas conveyed in their talk about what is ‘near’ and what is ‘far’, so as to qualitatively understand ‘scale’ in neighbourhoods. Thirdly, we report differences and similarities in the data from across gender and labour force status groups (ethnicity comparisons were beyond the scope of this analysis).

A number of features were commonly represented across all focus groups. A range of recreation places were talked about, including gyms, children’s activities, school grounds, and parks, either in the local area or further afield. Temporal effects were commonly discussed, for example time of day or week, as well as seasonal and weather impacts on being active in public places. All talked about activity places nearby (which they identified as local), particularly sports clubs such as

rugby, bowls, and tennis facilities, as well as going to *non*-local places well outside of the immediate neighbourhood.

1. Open spaces

Public open spaces were widely recognised as being important sites for physical activity. They provided opportunities for a range of activities for individuals, teams, and informal family and peer groups. A distinctive theme that emerged was the social opportunities that came with activity in public open spaces. Parks and playgrounds provided meeting places for both organized and incidental social interaction (Lund, 2002), particularly for parents.

They're [places] a good social place, I mean often parents talk to each other at the parks and playgrounds, people they don't know you just do, they can also be places to meet up, you know by appointment rather than random. (Konini, non-fulltime employed)

Being able to combine exercise with socializing in open places was valued by residents. The social side of physical activity distracted and disguised residents from the hard work side of physical activity. This turned it from a chore into something fun and enjoyable.

... if you go out with mates, sort of takes your mind of the fact you are working, being active, which is fun. (Rongotai, Māori)

Talk about open spaces varied across neighbourhoods. In Karori, participants referred to a wide range of open spaces available to them. As well as formal places such as recreation and sports fields, bowling clubs, playgrounds, and so on, less formal places such as bush walks and the local cemetery were frequently referred to as providing a variety of options.

'the cemetery is a great place to walk...There is endless opportunity for walking'
(Karori, non-fulltime employed)

Rongotai residents lamented the lack of informal space to support casual gatherings and larger groups, with the single picnic table by the sandy beach being only big enough for a small

family group. Rather than single use spaces such as sports fields, residents thought that informal places and those with multiple facilities offered opportunities for a range of activities that were more appealing to intergenerational groups. That is, such places allowed groups of people to be active together, beyond the usual team sports. When Waimumu participants spoke about open spaces it was often about the limited number of open spaces close by. There was only one close by park with a playground and field, with concerns expressed about safety in local nature walks. In response, participants referred to more distant places that better met their needs.

I used to take my kids to Potters Park, and it's way over in Balmoral but it's a great big park and there is plenty of things to do and it's safe as houses (Waimumu, non-fulltime employed)

2. Streets

All groups talked about streets as important sites for being active, with the state of footpaths and traffic safety a frequent topic of conversation. Unlike open spaces, however, talk about streets was generally restricted to the immediate area, that is, people did not relate stories about going to other neighbourhoods to walk the streets in the way they sought out parks or beaches. The exception was in Karori where there was a regular, walkable commute route to the central city.

Streets emerged as another type of place where residents could interact with others while being active. This included transport-related activity (commuting or going to shops) as well as more socially focused activity such as walking groups. Participants reported a sense of community associated with walking and biking around the streets of their neighbourhood. As well as the social function, people talked about walking on routes that included greenery as being restorative, helping them recover from the stresses and strains of everyday life.

Konini and Karori residents valued the opportunities that streets themselves provided to walk in such a beautiful environment, suggesting the local streets as health-promoting opportunity structures (Baum and Palmer, 2002). By contrast, Waimumu residents tended to talk about what it

was like *using* streets to get to a destination such as a shop or school. If they wanted to walk in beautiful places they would need to go elsewhere.

3. Significant qualities

In Karori and Konini the quality of places was generally considered positive, with talk often focusing on the restorative value of being active in pleasant places. One consequence that became apparent was how places were deliberately sought out for pleasantness, in keeping with Chaix et al's (2013) 'selective daily mobility'.

No, I love running in the bush and things, I think it's great, as opposed to running around the streets. I mean I like the character houses, I can do that, but I would much prefer to be in the bush and round the mountain bike parks and places.
(Karori, men)

While participants in Rongotai and Waimumu also recognised the importance of qualities such as pleasantness, other features stood out. In Waimumu, talk about places and activities often had a safety component, with details of places and times that were avoided, or mitigation steps taken such as walking with a dog.

Well there is nobody probably really up there but there is just a lot of bush and a lot of stuff probably could happen. I have got a dog so I feel safe as. When I am at home I feel safe when she is there guarding but out on the streets no I wouldn't.
(Waimumu, non-fulltime employed)

Rongotai's coastal setting means it is exposed to harsh weather and the sandy soil limits plant growth. It was interesting then, that there was very little talk about greenery and beauty when compared to talk in other neighbourhoods. The wind and open streets was a common back drop to talk about being active – or not if the weather was too harsh. Despite this, specific prompts were required to solicit reflections about including beautiful places with the magic wand revealed a latent demand.

Oh if we had something like that [Botanical Gardens] here I would definitely walk around that sort of area... (Rongotai, non-fulltime employed)

The beauty aspect of places was clearly regarded as a motivator for residents to be active. For example, the beach was widely regarded as a place that locals and non-locals sought out because of its spectacular nature.

Sometimes you know when you get up and you walk along the beach and the sun is coming up, it's...you know, sleep doesn't matter after that for a while, eh?
(Rongotai, Māori)

In contrast, the rocky foreshore was regarded as much less pleasant, and therefore not somewhere that people used as much or sought out for physical activity.

Karori, Konini, and Rongotai residents all talked about non-locals coming to use treasured local places such as the bush or beach, or favourably compared features of local places to other areas as a way of indicating quality. For example, residents referred to the privileged way in which they were able to use particular local places for activity. In the quote below a Karori resident, after weekending out of town, reflects on her neighbourhood:

I was thinking, well, yeah, it's really fantastic views but actually you don't have to drive all the way for a weekend to actually have that. (Karori, women)

The advantage of neighbourhood location referred to by Waimumu residents was ready access to other beautiful places via the motorway system.

4. Everyday needs

All groups discussed the ease of meeting everyday needs within the local area, and whether going elsewhere was either a necessity or choice. Karori was generally referred to as somewhere where *everyone's* needs could be met; it was seen as a self-sufficient place to live.

It's a really well serviced suburb, we've got the parks, we've got our school, our medical centre, our library, our swimming pool... gym, we've got plenty of facilities there to cater for people... and it's close to town so you can get to places pretty quickly. (Karori, women)

Waimimu and Konini were not seen as self-sufficient neighbourhoods for meeting either physical activity needs or more general everyday needs, with general agreement that residents needed to go to neighbouring suburbs for everyday activities. In Konini, concern was expressed for those unable to drive such as the elderly, to the point where it would be considered unliveable without ready car access. Not having ready access to a car was more common in Waimumu and there was some talk of residents needing to walk for transport or use public transport. For those with cars, however, the nearby motorway made the rest of the city accessible.

We've got the motorways... North Shore beaches are just so accessible... over the [harbour] bridge and straight over there (Waimumu, Maori)

By comparison, in Karori and Rongotai being able to walk to local destinations and everyday activities was referred to as an advantage and one of the reasons for living in the area.

Some physical activity outside the residential area was opportunistic. Those who left their residential area for work or study talked about engaging in physical activity on the commute, in particular by walking (including to the bus), running or cycling for transport. The workplace neighbourhood was also a base for physical activity at a nearby gym or a lunchtime walk or run.

Go to the gym in town then you can fit it in around work (Karori, men)

Nearness

Distance between the immediate neighbourhood and physical activity destinations did not necessarily translate into participants' views of what is 'near' to home. 'Nearness' to destinations appeared to be influenced by ease of access by car and frequency of use. In participants' talk about going to places for exercise or carrying out everyday activities such as shopping, the role of the car was often treated as implicit. Participants talk describing places as nearby often used phrases such as

‘only ten minutes away’, but it is clear this referred to ten minutes by car, not walking. Konini participants noted the facilities in other suburbs as being close by:

It’s pretty handy to take your kids to New Lynn or up to Kelston... good facilities there, the gyms and the pools (Konini, non-fulltime employed)

Motorway access into and out of Waimumu to the wider Auckland region was talked about as easy and fast. Participants indicated that beaches were approximately twenty five kilometers away were easily accessible, and therefore ‘not that far away’.

Konini residents conveyed a sense of nearness in their talk about frequent trips for everyday activities such as shopping or children’s activities in neighbouring suburbs, even though they are five to ten kilometers away from home. When they did so as a regular, usual thing, those destinations were referred to as ‘near’ to them, and part of everyday life, even though they were not within the immediate local area.

Given the differences in ‘nearness’ talk that emerged, we undertook an informal descriptive exercise to see whether there was variation in the distribution of places discussed by residents. We mapped locations discussed in the four study sites on Google Maps using the place names captured in participants’ talk of where they go (such as landmarks, streets, and facilities). While the graphical exercise was not expected to fully capture actual movements in the way that GPS and accelerometer methods can, the maps provided a useful spatial summary of locations identified in the data. The places identified by people living in high destination places (Rongotai and Karori) could mostly be located on a map with a 1 kilometer scale. By comparison, the Auckland neighbourhoods (Waimumu and Konini) needed to be scaled out to 5 kilometers to capture most destinations (results available from authors).

Contact with public places

Comparisons by person factors revealed subtle differences in how women and non-fulltime employed groups engaged with places through their physical activity.

Knowing places: talk in the Karori and Konini women's groups revealed considerable knowledge on topics such as local history, and the older people in the area – to the point of naming individuals and giving a detailed description of certain people and places. For example, the male Konini group noted seeing an older woman running and older people walking, and suggested older people played bowls and golf. But the female group named two organised walking groups with older people and gave details of an older male runner, including his name. In Karori, the male group had not seen many older people out but knew of some aged-care residences nearby. The female group, in contrast, noted where they had seen old people and insightfully discussed older people's lives e.g. how the public transport concession card freed older people to get around; older people drove to the cemetery for walks; one bus stop next to a named aged-care home had a bus shelter with seating but others did not, and improvements for wheelchair users near an aged-care home. The women participants' knowledge of the area showed a deeper engagement with local people and places than was evident among the men

Information about places: Full-time employed people in all areas appeared to have less intimate knowledge than others about the place they lived, and in Karori and Waimumu described their neighbourhoods as 'dormitory' suburbs. The non-fulltime employed groups spoke in more detail about everyday routes around their area, discussing walkways, through-ways and short-cuts. The full-time employed in some areas sometimes mentioned these, but in less detail.

Further, fulltime employed people's' sources of information about walkways and short-cuts generally came from formal sources (for example, Council brochures and websites, web searches), whereas non-fulltime employed participants had more often learned about them through local contacts and word-of-mouth, or simply by exploring. Participants in the female and non-fulltime employed groups gave more detail than others about the whereabouts of local public toilets, location and quality of convenience shops. They also provided historical details, likely learned from other residents.

‘Special’ versus ‘everyday’ places: Non-fulltime employed participants talked more of everyday activities rather than special events. The ‘magic wand’ question revealed different priorities amongst groups, with full-time employed participants emphasising special events or infrastructure solutions: in Konini and Karori they dreamed of more cafes, bars and special places like a rose garden or petanque court; in Waimumu: more organised events. Their non-fulltime employed neighbours generally wanted more modest changes, such as better climbing frames and more rubbish bins in the playground, less graffiti, or a ‘decent’ supermarket.

Discussion

We have shown that residents actively constructed or shaped ‘neighbourhoods’ in ways that took account of the local constraints and opportunities to live a physically active and healthy lifestyle. The study was conducted across four residential settings that varied in the opportunity structures they provided to residents, such as walkable built environments and quality, accessible public places. Residents’ social practices around physical activity (where they went and how they engaged with places) demonstrated their agency in shaping ‘neighbourhoods’ that enabled healthy lifestyles. Our study shows not only were people not restricted to the resources within their immediate area but also that they will make distant places ‘near’, notably when living in areas with fewer physical activity resources. Person factors were also important, for example, employment both took people out of their residential settings and lead to different ways of engaging with places, local and non-local.

The interaction between neighbourhood and person factors had implications for how easy it was to be physical active. While residents from all neighbourhoods in our study talked about being active in local and non-local places we observed differences in what that meant for being physically active. For some, the residential setting provided easy opportunities to be active in a variety of local places. Others lived in neighbourhoods with fewer easy or attractive physical activity opportunities where accessing places further afield was part of everyday life. As seen in food accessibility studies

(Coveney and O'Dwyer, 2009; Widener et al., 2013) transport played a strong role with such selective mobility, with car use (mode) and motorways (infrastructure) facilitating access to non-local places that met residents' needs for physical activity, or gave them more choice.

The ease of being active meant different things in each neighbourhood. In the Wellington neighbourhoods, residents talked about the abundance of choice and good quality of places nearby, with Karori residents also valuing the ease of going further afield for more choice. Talk in the Auckland focus groups on the other hand, was more reflective of the need to 'escape' (Diez Roux, 2003) local restrictions for easy opportunities to be active. For Konini residents, 'ease' was expressed as an assumption that travel further afield was part of the necessary compromise for living in a beautiful location, whereas Waimumu residents talked about travel being necessary but possible, thanks to the proximity of the motorway.

Beyond accessibility, factors of neighbourhoods and people appeared to affect how residents engaged with places. Streets that promoted walking were talked about as being more than routes, instead acting as opportunity structures (Baum and Palmer, 2002) for social engagement and contributing to wellbeing. For women and those not in fulltime employment, talk about being active concentrated on the everyday, repeated contacts with places which in turn encouraged physical activity practices such as walking (Lund, 2002) and conveyed a sense of familiarity, belonging, and 'nearness' (Heidegger, 1982). Heidegger (1982) moved beyond a spatial definition of neighbourhood in order to understand how neighbourliness emerges. Extracted from its spatial confines, nearness is no longer limited to notions of geographical proximity. Instead it arises through experiences of amicability, congeniality, harmony and pleasantness: a warm and welcome affective connection between people and places where everyday domestic lives intersect.

But not everyone experienced the possibility of engaging with streets as 'third places' (Oldenburg, 1999). Limited safety, pleasantness, and destinations reduced the opportunity for Waimumu residents, men, and fulltime employed people to have in-depth ways of engaging with

local places such as streets. In these cases, residents are perhaps less likely to receive the social and wellbeing co-benefits of being active in socially supportive environments.

What shape is your neighbourhood?

Our findings demonstrate the need to move beyond simple explanations of fixed geographical boundaries that can be applied equally to all. Taken literally however, looking for interactions between neighbourhood and person factors can find us drowning in a sea of endless complexity where each geographical setting has a different definition for each resident. In a pragmatic approach we use a metaphor to help manage the complexity. We propose a bone metaphor to represent various neighbourhood ‘shapes’ that describe how people interact through physical activity with places within and beyond their residential setting. For example, a dog-bone shaped neighbourhood would be one whereby people spend much of their time in a few localities (where home and work, for example, act as the ball at either end of the bone), and travel back and forth between these localities (the shaft).

In our study employment was clearly an important person factor in shaping where and how residents engaged with places. A ‘dog bone shaped’ neighbourhood could be seen in the talk from fulltime employed residents who left the residential setting most days. Workplace location facilitated access to another set of places such as gyms and lunchtime walking and running routes close to work, expanding accessibility to health-promoting opportunities beyond the residential setting (Salze et al., 2011). The commute route itself (represented by the bone shaft) was also evident as part of the ‘neighbourhood’. In Konini the convenience of picking up food on the drive home rather than walking to local stores suggests the dog bone shaped neighbourhood these residents experienced / created may well be limiting their physical activity, particularly for the kind of incidental, social walking along familiar streets referred to elsewhere. By contrast, for some employed Karori residents walking and/or bussing their the commute route provided a valued opportunity to be active in a pleasant, restorative environment, in keeping with Gatrell’s (2013) therapeutic mobilities. Through

their practices these residents “re-created” the shape of their neighbourhood to extend beyond the suburb boundary to include being physically active in an environment they valued and considered pleasant as part of their daily routine, or lifestyle. Of course, the converse is also possible. Employment may take people out of relatively health-promoting settings to commuting and workplace locations that constrain healthy lifestyles (Inagami et al., 2007)

We also found that neighbourhood-level factors appeared to shape resident’s neighbourhoods. The places Waimumu participants talked about reflected a much broader, thinner, ‘scapula’ type shape, with residents ranging far and wide. While the motorway eased travel to non-local places, an important driver for residents to travel further afield was to seek opportunities for physical activity that were not available or acceptable locally. Konini provided more positive local opportunities (notably for leisure walking) but residents again regarded it as normal to engage in many non-local places for other types of physical activity – it was part of the local ‘lifestyle’ (Cockerham, 2005; Frohlich et al., 2001). Distance did not necessarily equate to places being considered ‘far’ though. In both Waimumu and Konini, frequent, regular engagement with locations and the relative ease of travelling to them were referred to in ways that suggested residents considered them close and familiar, despite their being more distant than the Wellington counterparts. As Carpiano (2009) found, observing residents’ interaction with local and non-local places can illustrate neighbourhood boundaries. However, our findings suggest, the concept of neighbourhood boundaries may also need to include Heideggers’ (1982) concept of nearness that includes familiarity and belonging.

By comparison, residents in the more walkable Wellington neighbourhoods talked about the sufficiency of their local and adjacent settings for meeting their physical activity and everyday needs, as captured by a ‘vertebra’ shaped neighbourhood. While Karori residents in particular talked about the ease of going elsewhere, there was not a sense in either Wellington settings of needing to ‘escape’ the neighbourhood limitations referred to by Diez Roux (2010). Residents in both

Wellington neighbourhoods described their neighbourhood as providing a desired lifestyle advantage through the ease with which they could walk about. While residents also identified many non-local physical activity places, the smaller geographical spread in the Wellington suburbs offers further support that a more walkable residential setting can lead to a smaller, vertebra shaped neighbourhood.

The bone metaphor helps us think about the role that everyday activity has in shaping exposure to (potentially) multiple locations and environments beyond the immediate residential setting, both in terms of time spent in more or less distant locations and in the potential for engagement with those settings through physical activity. It therefore turns our attention to how much residential settings may structure the need to go elsewhere for the opportunity to live a healthy lifestyle, and, importantly, whether the resident has the capacity to do so. Certainly the Auckland neighbourhoods were not seen by residents as ‘good’ places to live unless residents were able to drive independently. Levels of physical activity may be lower for people living in a scapula shaped neighbourhoods if the time spent travelling displaces exercise and recreation. Vertebrae shaped neighbourhoods may make a healthy lifestyle more difficult if residents are dependent on poor quality local resources or social, cultural, or cost factors make them less accessible (Attree, 2004) leading to undesirably spatially limited mobility (Vallée et al., 2011).

Limitations

A key limitation of our study is that we were not able to compare by car access. However, all focus groups made frequent observations on what living in the neighbourhood would be like for people who did not drive, or who were dependent on public transport or lifts from others. Mavoa et al.’s (2012) study of public transit accessibility highlights how much more onerous and time consuming accessing non-local public places would be for non-drivers. A somewhat unexpected finding was that residents of Waimumu, a lower socio economic area, ranged so far across the city, despite the expectation that cost of car travel would be limiting (Vallée et al., 2010; Vallée et al.,

2011). Failure to take into account the broader roading infrastructure would be to miss the role that the motorway played for these residents: the whole city is ‘next door’.

Focus groups provided rich but broad data about physical activity and public places across a range of settings. Limited inferences can be made about individual experiences of specific places, particularly when comparing local and non-local places. Approaches such as ‘go along’ interviews could provide deeper insights, for example, allowing us to investigate whether further away locations could act as socially supportive ‘third places’. Future studies could compare levels of engagement by residents in more or less walkable neighbourhoods to help understand the implications of reduced engagement in local places, because of avoidance, choice, or factors such as employment. While the bone metaphor readily captured the geometry of engagement evident in residents talk, richer information on depth of engagement could add another dimension to the concept of ‘neighbourhood shape’.

Conclusion

Qualitative methods revealed the shape of people’s experienced neighbourhood as influenced not just by the distance they go to undertake practices such as physical activity but by the ease of access and incorporation of activity and places into everyday, regular routines. Comparing these experiences across different types of residential settings allowed us to see more clearly the role of the residential setting in influencing where and how people engaged in places such as streets. Resident’s talk illustrated how the repeated, mundane actions of walking among familiar routes and faces for transport or leisure meant the street could become a ‘third’ place of belonging and conviviality (Oldenburg, 1999), and therefore a place that promotes wellbeing. But comparing talk about streets from residents in quite different built environments suggests such third places could emerge only if residents felt they were able to engage positively with public places. That is, not all residential settings equally provide opportunities for neighbourliness, and motivation for residents to undertake physically and socially active lifestyles. Secondly, even where such opportunities are available, we

found that factors about people also played an important role in the geometry of physical activity, as well as how residents sought to live healthy lifestyles. If so, the quality and safety of streets are likely to be critical if the social and physical consequences of active transport modes such as walking and cycling are to be health promoting (Gatrell, 2013). Research and practice around the built environment and wellbeing needs to incorporate ease of access to health promoting environments, no matter who people are, and where they start their daily trajectories.

While the geometry of where people go and what they do can be captured by activity space, recognition should also be given to the collective lifestyles (Frohlich et al., 2001) that inform and are informed by that geometry. Demonstrating agency (Cockerham, 2005), participants actively sought out places to meet their needs and preferences. But the location of those places, and how people move through them was also informed by the context (Rainham et al., 2010). Thinking about ‘neighbourhood shapes’ as an integration of geometry and lifestyle has helped shed light on the specific role that residential settings play for physical activity, and wellbeing more generally.

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